



ANDOVER IRON MINE, SUSSEX CO.

# **ABANDONED IRON MINES OF ANDOVER AND BYRAM TOWNSHIPS**

**SUSSEX COUNTY  
NEW JERSEY  
1978**

**STATE OF NEW JERSEY  
DEPARTMENT OF LABOR AND INDUSTRY  
DIVISION OF WORKPLACE STANDARDS  
OFFICE OF SAFETY COMPLIANCE  
TRENTON, NEW JERSEY**

INTRODUCTION

This report was undertaken by the Department of Labor and Industry, Mine Safety Section, to accumulate pertinent data concerning the known abandoned iron mines in Andover and Byram Townships, Sussex County, New Jersey, as part of the New Jersey Abandoned Iron Mine Project. Mine locations were visited by Mine Safety Section personnel and locations plotted on Township Maps. The workings are shown in plan on sketches all of which supplement this report.

Reference material consisted of : "1868 New Jersey Geological Survey", by George H. Cook; "1910 New Jersey Geological Survey, Volume VII", by W.S. Bayley; "Geology of the Andover Mining District-Bulletin 62", by P.K. Sims and B.F. Leonard.

The mines included in the Andover group, known as the Andover, Sulphur Hill, Tar Hill and Longcore are located about a mile northeast of Andover on the east side of Limecrest Road above the intersection at Old Creamery Road, as shown on the general map, Plate 1. The Andover and Sulphur Hill Mines have each been large producers, the total yield of the two mines estimated at 400,000 tons. The Tar Hill and Longcore Mines are credited with small tonages only. The mine at Andover was extensively worked before the Revolutionary War and the ore was smelted in the Andover furnace, which was built in 1763. During the war the mines and furnaces were taken possession of by the Continental Congress and were worked to

supply the army with iron and steel. After the war the mine was abandoned until it was reopened in 1847, by the Trenton Iron Company, which worked them for a period of eleven years.

The Sulphur Hill Mine was opened sometime between 1855 and 1860. It was operated for a few years and then closed, probably in 1863. The mine was reopened in 1871 and worked intermittently until 1880 when it produced 15,200 tons during that year. The mine was abandoned apparently because of the large quantity of sulfur in the ore.

The Tar Hill and Longcore Mines were opened before 1855. Between 1867 and 1873, the mines were in operation, but have been abandoned since 1873. Production from the Tar Hill and Longcore is not known, but it was probably small.

The abandoned iron mines of Byram were not as large, nor as important as some of the other producers in the Highlands. The general locations are shown on Plate 14. The most important ore producers of Byram were the Cascade, Roseville and Gaffney Mines, the largest by far being the Roseville operation. The problems left behind naturally, would be greatest at these locations and special precautions should be taken in these areas prior to future development.

The history of every mine that has ever produced ore, as far as is known, is briefly touched upon, and explorations that never became producing mines are described. Plan sketches of most openings have been prepared and also are included. Hopefully, the information presented will

prove beneficial to Township officials involved in development planning and to those others interested in this subject.

### SULPHUR HILL MINE

The Sulphur Hill group of openings comprises three pits (the north, middle and main pits) a caved shaft, a shallow rock cut and three small openings south of the main pit. The workings are shown in plan on Plate 2 and located a short distance northeast of the main Andover underground workings.

The north pit, about 5 to 15 feet deep was the most recent opening.

The middle pit is 10 to 20 feet deep and corresponds to the northwest pit mentioned by Bayley and reported by him to be on the "back vein".

The main pit workings include the central opening whose maximum depth is around 80 feet, an inclined cut at the southwest end, a haulage way parallel to the inclined cut and a dry tunnel 170 feet long that enters the pit from the southeast.

A caved shaft about 15 feet deep lies about 70 feet northeast of the main pit and a shallow cut south of the shaft all as shown on Plate 2.

The Sulphur Hill Mine is the name given to the northern most openings of the Andover Pits which is north of the Andover Mine, and a short distance west of the projection of its trend. The striking differences of the two mines are primarily that the Sulphur Hill Mine is magnetite

while Andover is mainly hematite, and the large number of sulphides at Sulphur Hill.

Bayley reports the later workings showed that the ore existed in two parallel deposits striking northeast and dipping southeast. The southeast deposit was found to be a shoot pitching 30° northeast and the dip high to the southeast.

#### TAR HILL

Openings in the Tar Hill area, shown in plan on Plate 3, includes three main pits at the northeast end and several scattered shafts and test pits.

Pit 1, which is 10 to 12 feet deep, was dry when visited. Pit 2, is a shallow cut, the north end exposes an opening leading to a water filled stope, depth unknown. Pit 3, is comparatively long, about 30 feet deep at the north end. Several small shallow scattered pits appear at the west side of Pit 3.

The first openings were made some time prior to 1855, as in that year abandoned pits are known to have existed. One at the time was 70 feet wide and 60 feet long and the other one was 100 feet long and 10 feet wide. Between 1867 and 1873, the mine was in operation, but since the later date as far as is known the place was abandoned except for some development work done in 1880, which did not amount to anything worth while.

The Tar Hill and Longcore locations can be reached by walking north on the dirt road a short distance west of the Rutherford Avenue and Hemlock Avenue intersection.

#### ANDOVER MINE

The Andover Mine is 600 feet south of the main Sulphur Hill pit and is separated from it by a flat bottomed valley. The mine workings as shown in plan on Plate 4, consist of a large open cut, approximately 850 feet long, 50 feet wide and 85 feet deep. Two pits southwest of the open cut, several small pits on the hill northeast of the open cut, some underground workings that extend beneath the hill at the northeast end of the open cut. The Andover deposit was worked out before 1880. The floor of the open cut is mostly covered with muck, large boulders and vegetation. The pitch is to the northeast with a variable dip ranging from 90° at the southwest end to as low as 25° southeast at the northeast end of the open cut.

The main pit was worked mostly from the surface. To the north the ore pitched beneath the surface and was worked underground to a distance of 200 feet or more making the entire length of the ore body that was mined about 1,200 feet. In the northeast portion of the mine the ore was principally magnetite. The whole pit is said to have been filled with ore.

The following description is credited to Richard George, at one

time superintendent of the Andover Mine and very ably describes the workings at the time.

"The open excavation which has been made along the course of the deposit is 750 feet in length and from 30 to 60 feet or more in width and variable in depth. At the southwest end the depth of the deposit appears usually to have been small, although in places it increases to 30 or 40 feet, forming what may be called basins or bowls formerly filled with ore. There are two or three of these basins in the southwestern portion of the mine, the ore of which has been entirely worked out. Proceeding toward the northeast we find another basin of very great size, several hundred feet in length and 85 feet in depth, where the deposit expands to an average width of 65 feet. In this part of the mine also, the ore has been mostly worked out, leaving a vast pit, the side walls of which are generally vertical and the bottom very uneven and irregular. The immense mass of ore which has been taken out of this pit were of two varieties, known to the miners by the names of "blue ore" and "red ore". The ore found on the top, next to the two walls and the bottom was of the red hematite variety, while the center was usually the blue or magnetite like ore. Passing on to the northeast from great pit we come to the middle stopes where the railroad upon which ore is taken to the Morris Canal enters the mine. The workings at the middle stopes have reached 25 to 30 feet below the level of the railroad, and at this point the ore bed is much narrower than usual. Passing onward to the northeast, the workings

are no longer open to the sky, but are entered by means of drifts and shafts. They extend about 200 feet beyond the middle stopes, making the whole distance throughout which this ore deposit has been opened nearly 1,000 feet. In the extreme northeast workings the width of the ore averages about 30 feet and the lowest point of the mine is 50 feet below the railroad. The ore in the northeast stopes approaches more the condition of magnetite.

The main Andover location is easily located just west of Limecrest Road, a short distance north of Old Creamery Road.

#### LONGCORE MINE

Openings in the Longcore area include five pits, a small trench and two long cuts and two test pits.

Pit No. 1, was not examined. Pit No. 2, is approximately 15 feet deep to water and shown in plan on sketch 5. Pit No. 3, is about 10 feet deep and apparently has a water filled shaft near the northeast end. Pit No. 4, is 8 to 10 feet deep to water. Pit No. 5, is about 10 feet in diameter and 4 feet deep. Pit No. 6, is a long cut 15 feet deep.

The Longcore area lies about one-half mile northeast of the Tar Hill group, and abandoned before 1855.

#### GAFFNEY MINE

The Gaffney Mine was located about 400 feet east of Lee Mill Road opposite Lot 14, as shown on Plate 6. The visible remains consist of four fair size water filled pits and two small dumps shown in plan on the same plate. Pits labeled 1 and 3 are presumably collapsed shafts and pits 2 and 4 probably caused by ground subsidence of collapsed stopes.

The original openings at this location are old, but the later openings date from 1874. The mine was worked for a few years, but was closed in 1876. It was reopened in 1880, but was abandoned shortly afterwards. After being opened a vein 6 to 8 feet wide of good ore was developed. Very little is known concerning the history of the operations however, Bayley reports it was evident that the workings were extensive judging from the dump heaps scattered around the old shafts.

The deposit, from the Getz report exhibited a northeastern strike, dipped southeast and pitched northeast.

Development, we understand, is planned for this area and it should be pointed out that the Township may find it prudent to consult with the Mine Safety Section concerning potential hazards before building actually begins.

#### MCKEAN MINE

The McKean Mine was located south of Tamarack Road, opposite the

south end of Johnson Lake, shown in plan on Plate 7. Present day remains consist of a series of small pits, shafts and small dumps.

The mine was first opened in 1873 by a shaft 40 feet deep and drifts 40 feet long. It was operated intermittently until 1880. The vein where first discovered was 12 feet wide. From this, about 1,200 tons were removed. When operations ceased there were two shafts 200 feet north of the older workings and 100 feet apart, besides several pits. The depth was 90 feet. The dip of the ore body was steep to the southeast. Total yield of the mine is reported to have been 4,000 tons.

#### ROSEVILLE MINE

The Roseville Mine was located south of Amity Road, generally as shown in plan on Plate 8. Today's visible remains consist of a large open cut, a fair sized pit and a number of smaller pits. The open cut and the large pit meet at an angle of  $135^{\circ}$ . The small pits are scattered and evidently are explorations. Total production of the mine is estimated at about 70,000 tons.

The deposit is partly in gneiss and partly in limestone. It was first worked about 1850 and thereafter at intervals until 1870, yielding large quantities of ore. It was again operated in 1880 for several months during which time, 1,200 tons of ore were removed. There are reported to be two ore bodies with their long axes inclined at  $45^{\circ}$  or possibly a

single large one that curves to this extent. In the southern pit, about 200 yards south of the northern, the strike of the deposit was north-northeast. At the surface the dip in each case was vertical, but at the bottom of the pits it became steep easterly. At the same time the ore body diminished in width at greater depth.

#### CHARLOTTE MINE

The Charlotte Mine sometimes known as the Bemco Prospect is located near Cranberry Lake approximately 1,000 feet southeast of Mr. David Halls home on Hilltop Road on State property.

The uranium ore deposit was prospected and developed through a series of shallow open cuts, a shaft and raise, and a main incline which was driven along the strike in a northwest direction. This adit is roughly 6 by 10 foot in section and driven for a distance of 25 feet without timbering. A nine by seven foot raise connects the adit with the surface 25 feet above. Ninety feet north of the portal a five by five foot vertical shaft was sunk 25 feet deep. Over 95 tons of uranium ore were removed. The deposit averages 7 feet thick over a strike length of 280 feet, striking northwest with an average dip of 60° southwest.

The plan of the workings are shown on Plate 9. At the time of inspection the openings on top of the hill, the shaft and raise were collapsed and the portal of the adit on the south slope of the hill was open.

Since that time the openings have been enclosed with fencing by the Bureau of State Parks.

#### CASCADE MINE

The Cascade Mine is located about one-quarter mile north of Jefferson Lake on the east side of the abandoned Delaware Lackawanna and Western Railroad, presently serving as an unimproved road. The workings are shown in plan on Plate 10. All the shafts and pits were filled with water in early 1978 and unprotected. Several of the shafts and open cuts, above the water, expose openings presumably leading to underground stopes. Numerous fair size dumps indicate that considerable work was done here sometime in the past.

The Cascade operation was worked in 1850 or thereabouts for the Andover Forge. It was reopened in 1869 and operated continuously until 1877, when it was abandoned. In 1883, a little work was done near the old shafts, but nothing was developed. The ore vein varied from 3 to 11 feet in width, dipped  $35^{\circ}$  to  $45^{\circ}$  east and exhibited a nearly north strike. Some distance to the north of the main openings, little work was done on a narrow vein that proved uneconomical to develop.

#### SILVER MINE

The Silver Mine openings were situated on both sides of the

abandoned Delaware Lackawanna and Western Railroad several thousand feet south of Cranberry Lake as shown located on Plate 11, where the brook crosses the railroad bed. On the west side of the railroad, the shafts appear as small depressions 4 to 6 feet in diameter by 3 to 4 feet deep. The pits are small and shallow. The workings on the east side of the railroad bed, in an expanse of low land, appear as a series of small water filled pits, the largest approximately 15 feet in diameter by 7 feet deep. The present day evidence at this place would indicate that operations consisted mainly of exploration with little mining accomplished.

The old surveys confirm the operation here as nothing more than exploratory in nature. The workings are shown in plan on Plate 11.

#### ALLIS EXPLORATIONS

The Allis openings were north of the Cascade Mine on the east side of the Delaware Lackawanna and Western Railroad as shown located on Plate 12. Bayley reports a little ore was discovered here before 1873 and some mining was done but the quantity of ore raised is not known. The operations were abandoned shortly after 1873. Outside of this nothing more is known of the history of the mine.

### BEDELL MINE

The Bedell Mine was supposedly one-quarter mile south of the Gaffney Mine as shown located on Plate 14. The area was examined without successfully locating any evidence of past mining activity. If it was located in the Jersey Central Power and Light Company right of way then it is conceivable that all traces are completely obliterated. However, the location shown on Plate 14, may be in error; perhaps some knowledgeable resident of the area may offer information as to the exact location.

Bayley reports, "At one time the mine was of considerable importance, if one may judge from the size of its dumps. There are two shafts, which must have been worked in the 1890's, and two pits. Nothing has been learned of the history of the mine or of its economic importance."

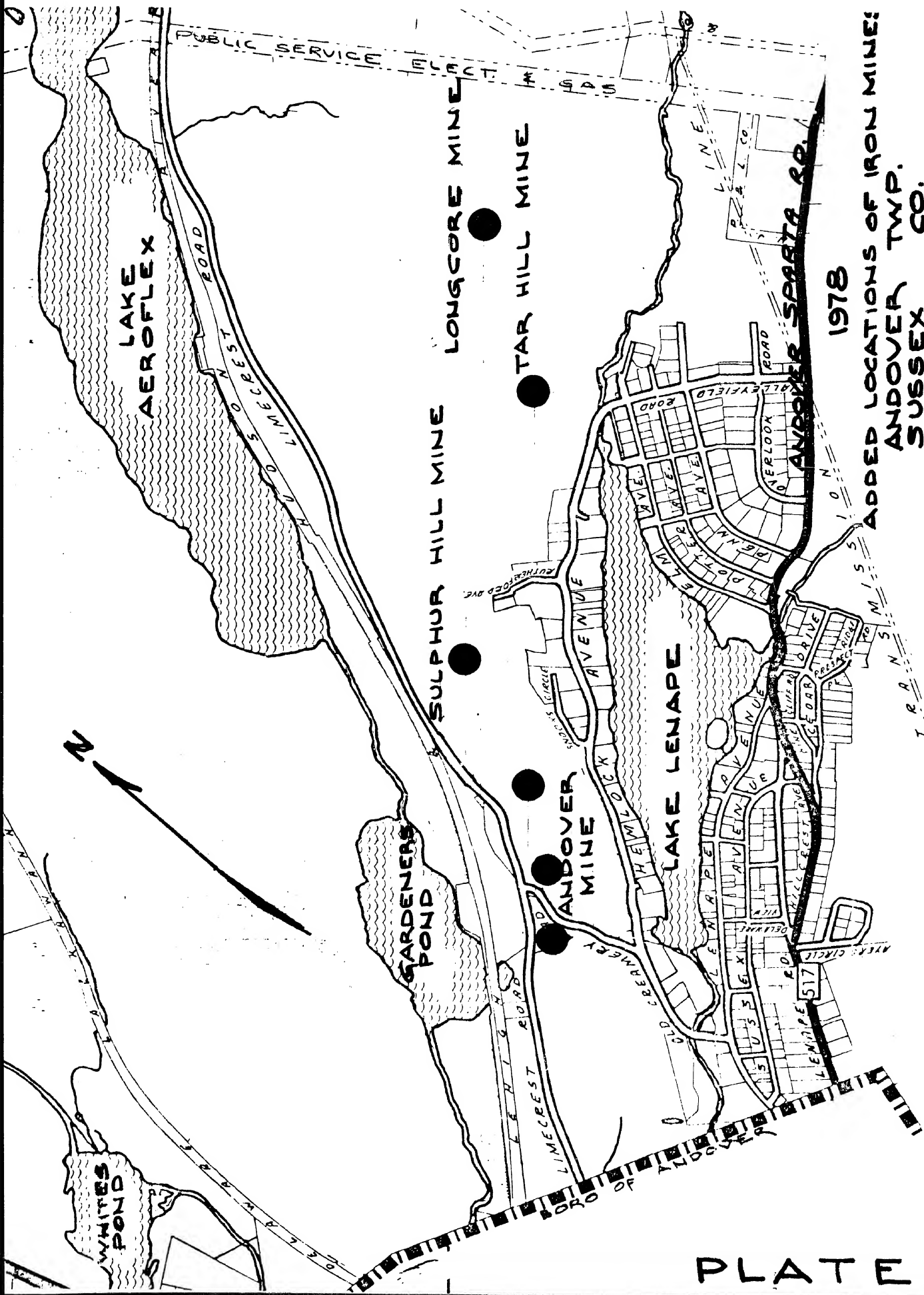
### BYERLY OPENINGS

The Byerly openings were made about 1873 on the west slope of a high ridge southwest of the Roseville Mine located as shown on Plate 14. The location was taken from the 1910 Survey and could be in error as Bayley indicates the exact location was not identified. Openings were on a line of attraction striking northeast and varied in depth from five to fifteen feet. Other than this, nothing is known of the history of the mine.

The location shown on Plate 14, was examined without observing any evidence of past mining activity. The ore found at this place was supposedly a red hematite.

#### FRENCH'S MINE

The French's Mine was located on the west side of French's Pond as shown on Plate 14. Plan of the workings, in the Allamuch Boy Scout Camp area is shown on Plate 13. Operations here were small and unimportant, about a thousand tons of ore were mined before 1973, at which time the place was abandoned. The present day remains consist of some scattered, overgrown, and very shallow pits.



ADDED LOCATIONS OF IRON MINES:  
 ANDOVER TWP.  
 SUSSEX CO.

MINE SAFETY SECTION  
 U.S. DEPT. OF LABOR AND INDUSTRY

1978

PLATE 1

PLATE 1

SCALE: 1" = 340'

SCALE: 1" = 150 FT.

NORTH

ROAD

LIMESTONE

NORTH PIT

MIDDLE PIT

DECAVED SHAFT

CUT

MAIN PIT

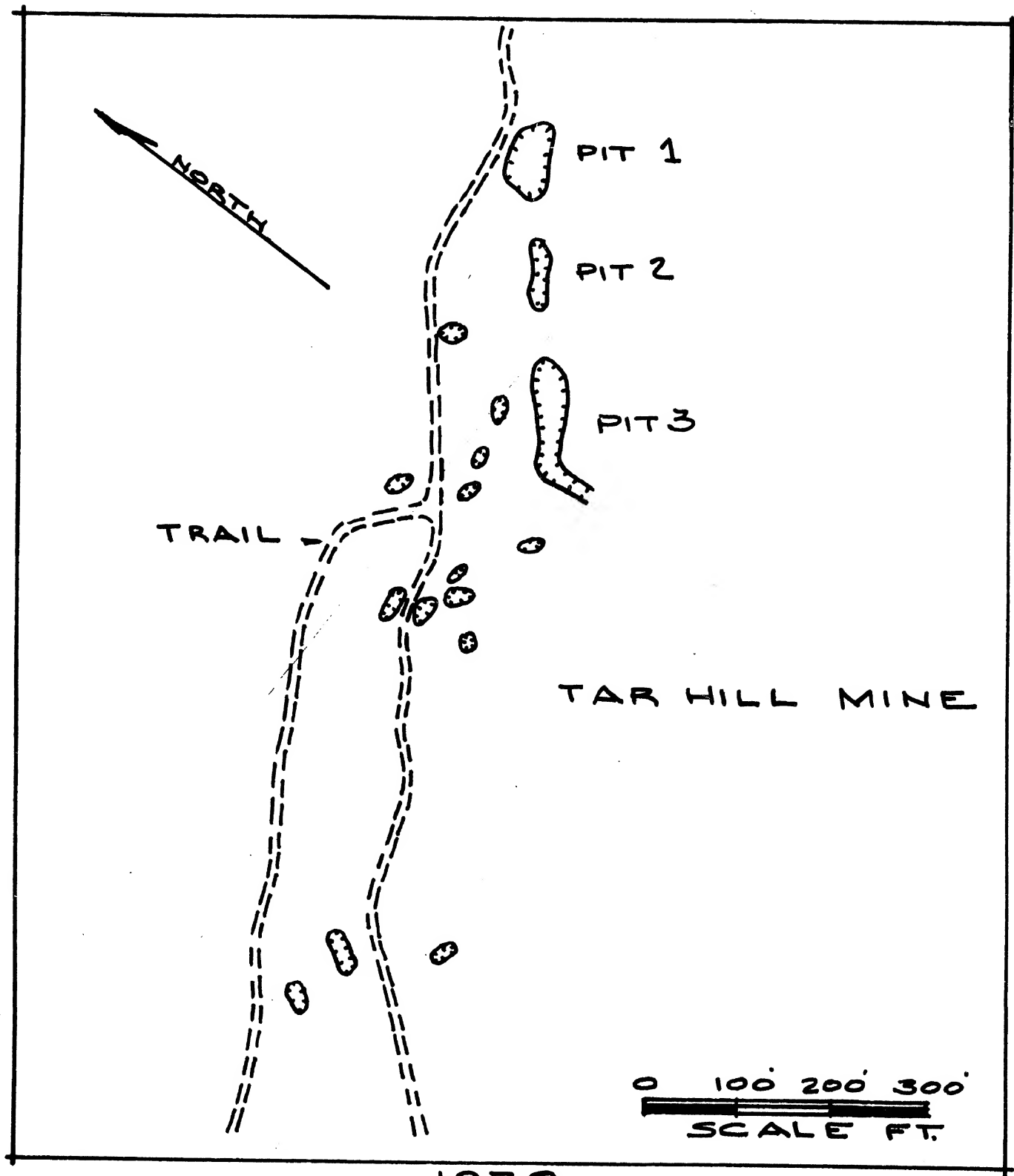
TUNNEL

SULPHUR HILL MINE  
ANDOVER TWP.  
SUSSEX CO.

MINE SAFETY SECT.  
N.J. DEPT. OF LABOR & INDUSTRY

PLATE 2

PLATE 2



1978  
TAR HILL MINE AREA  
ANDOVER TWP.  
SUSSEX CO.  
MINE SAFETY SECTION  
N. J. DEPT. OF LABOR & INDUSTRY  
PLATE 3

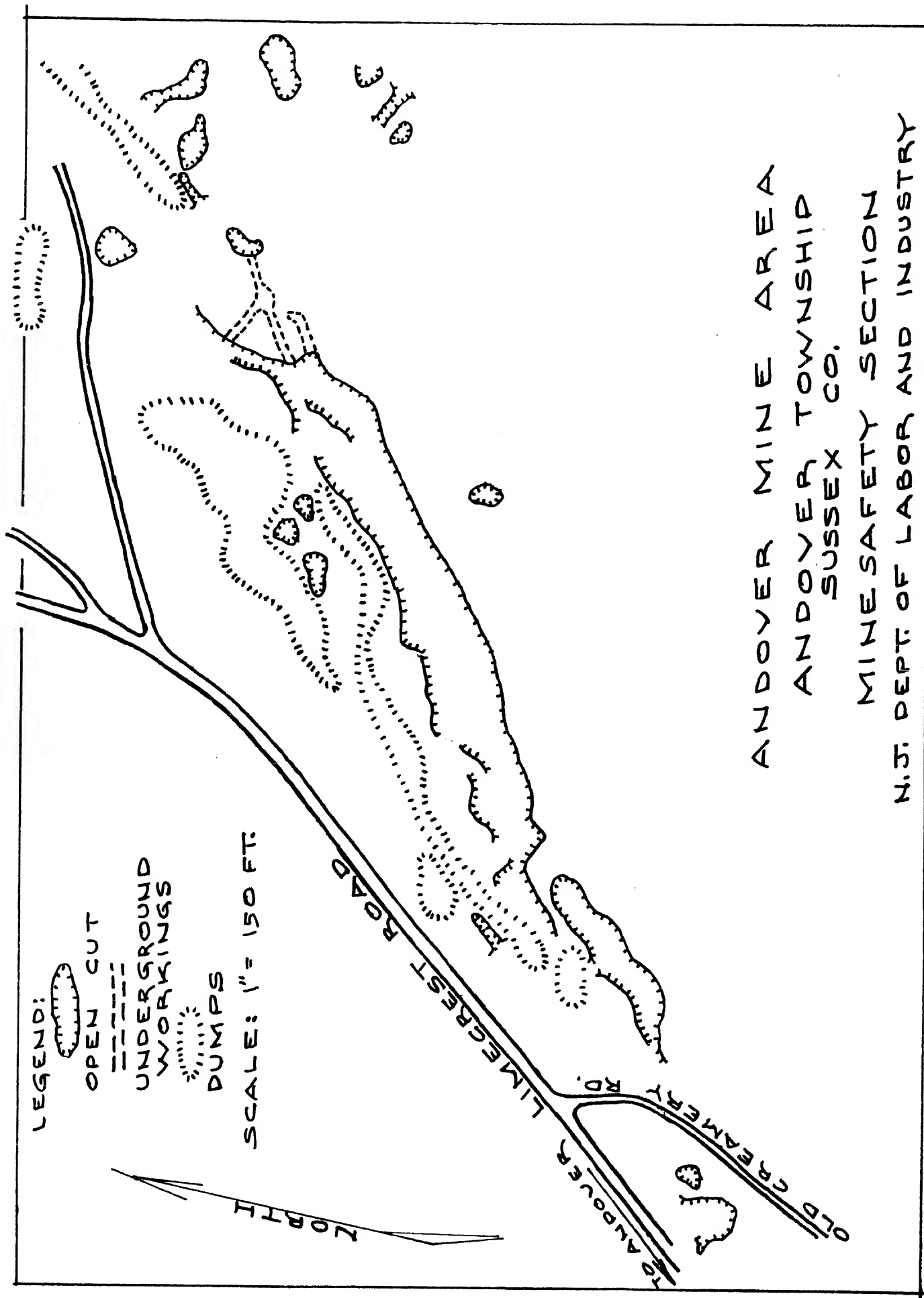
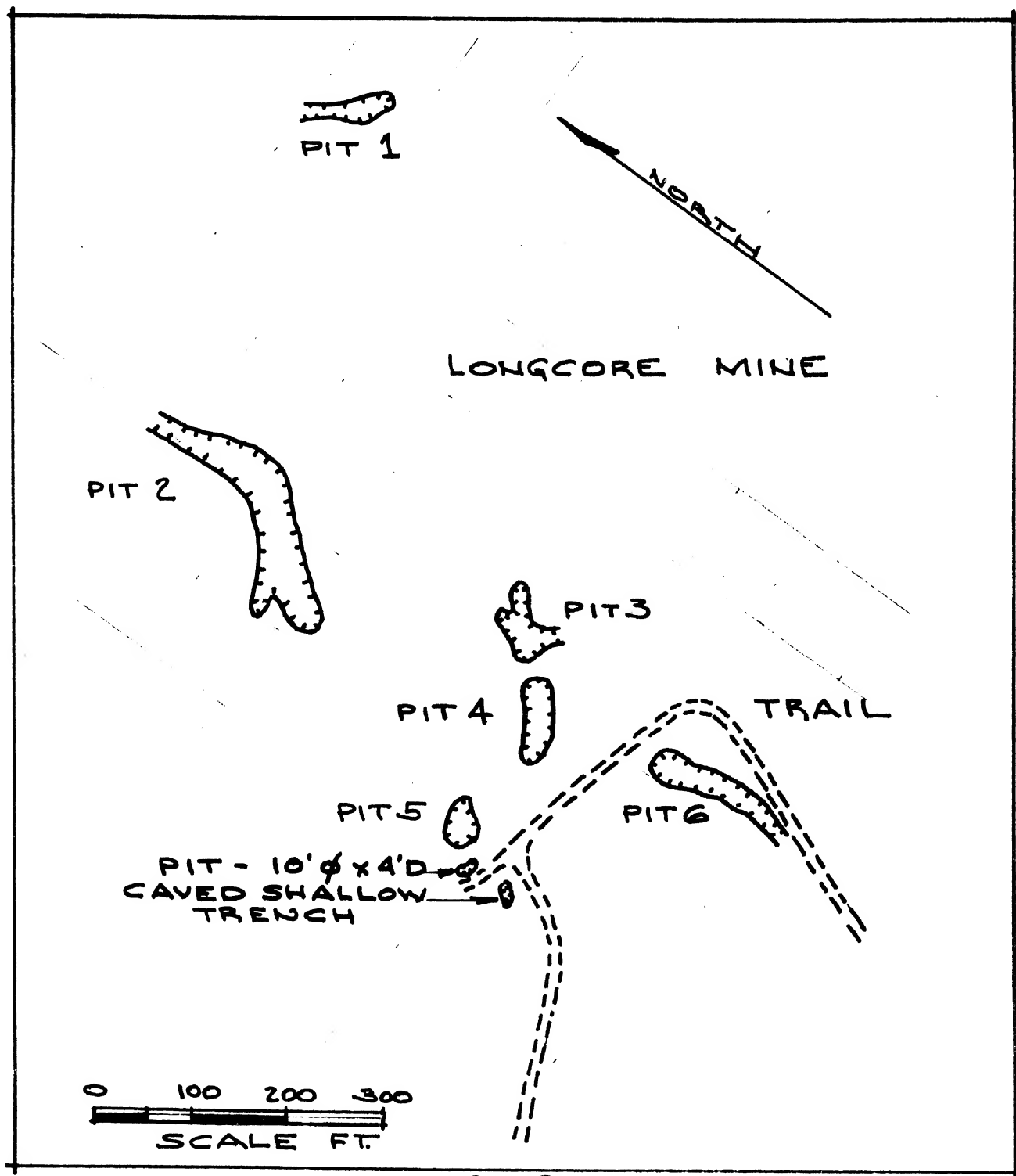


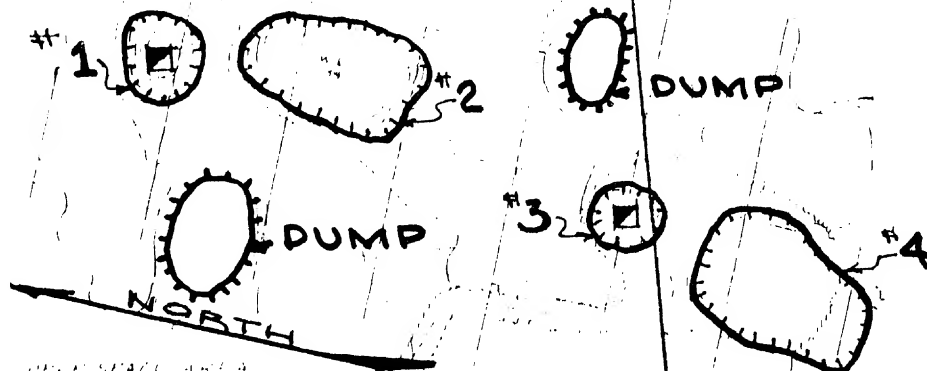
PLATE 4



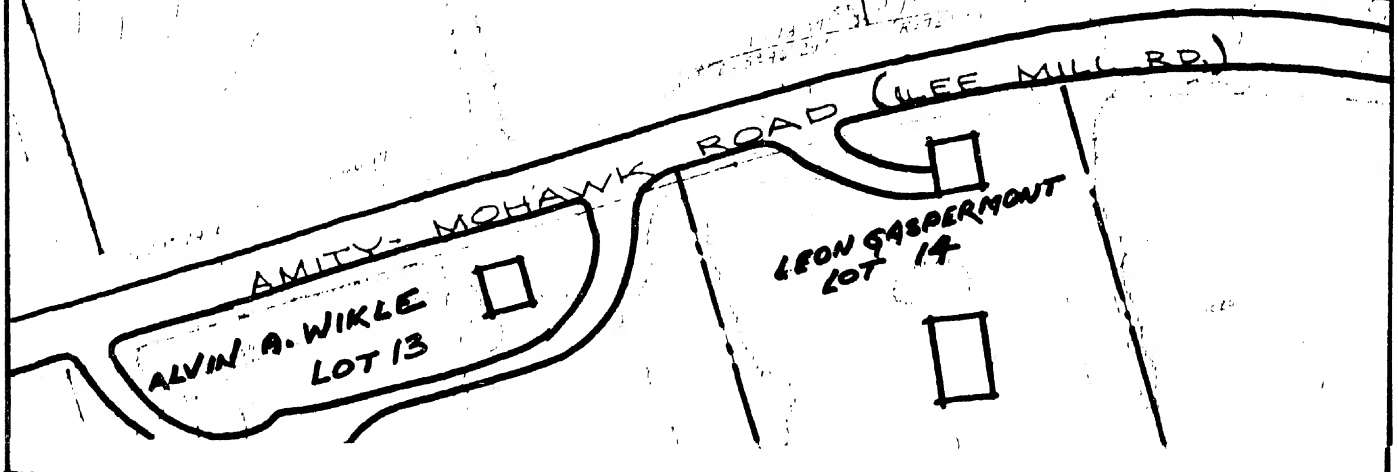
1978  
LONGCORE MINE AREA  
ANDOVER TWP.  
SUSSEX CO.  
MINE SAFETY SECTION  
N. J. DEPT. OF LABOR & INDUSTRY  
PLATE 5

EASEMENT

JERSEY CENTRAL  
POWER & LIGHT CO.



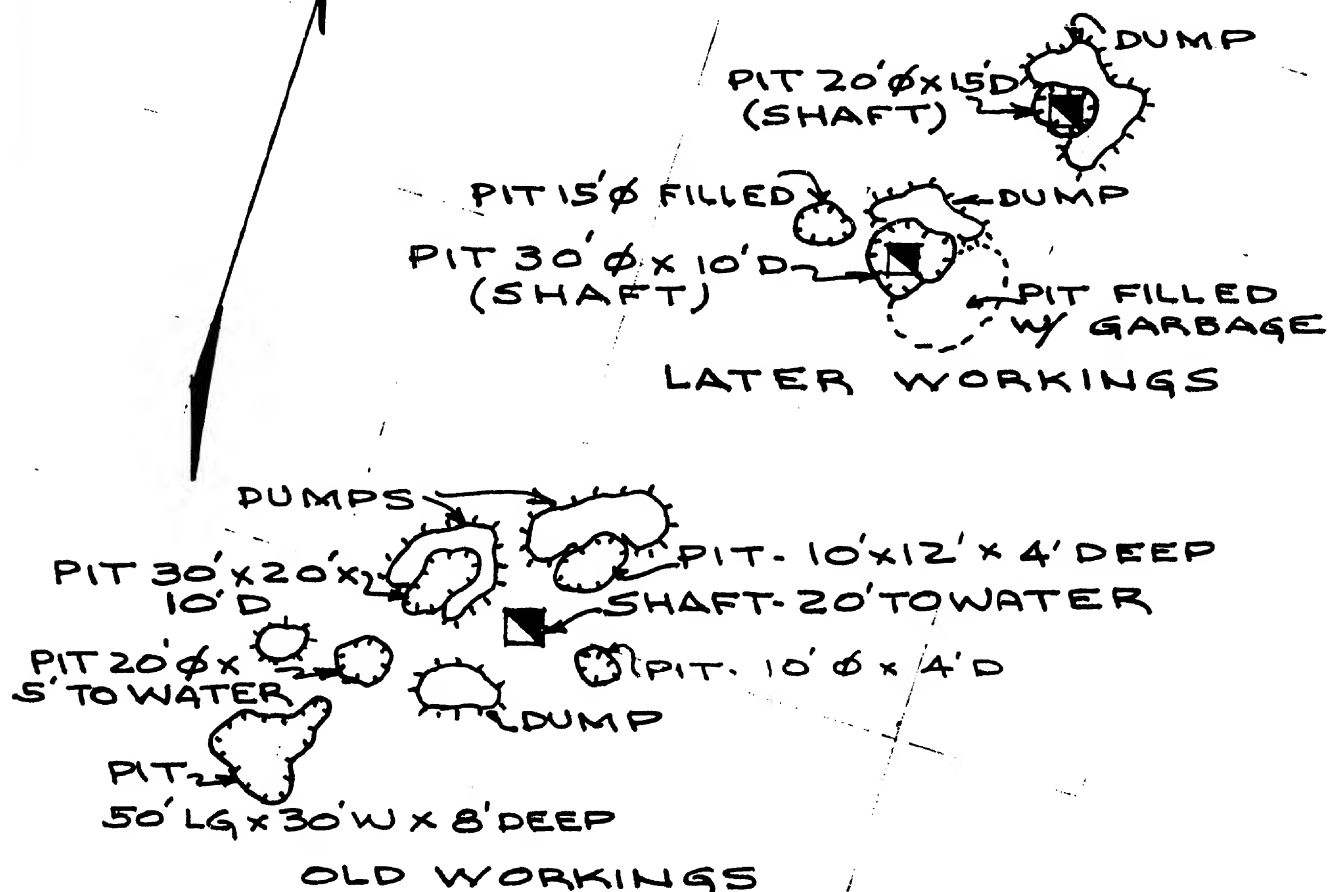
GAFFNEY MINE AREA



1978  
BYRAM TOWNSHIP  
SUSSEX CO.  
MINE SAFETY SECTION  
N.J. DEPT. OF LABOR & INDUSTRY  
PLATE 6

JOHNSON LAKE

TAMARACK ROAD



4-3-78

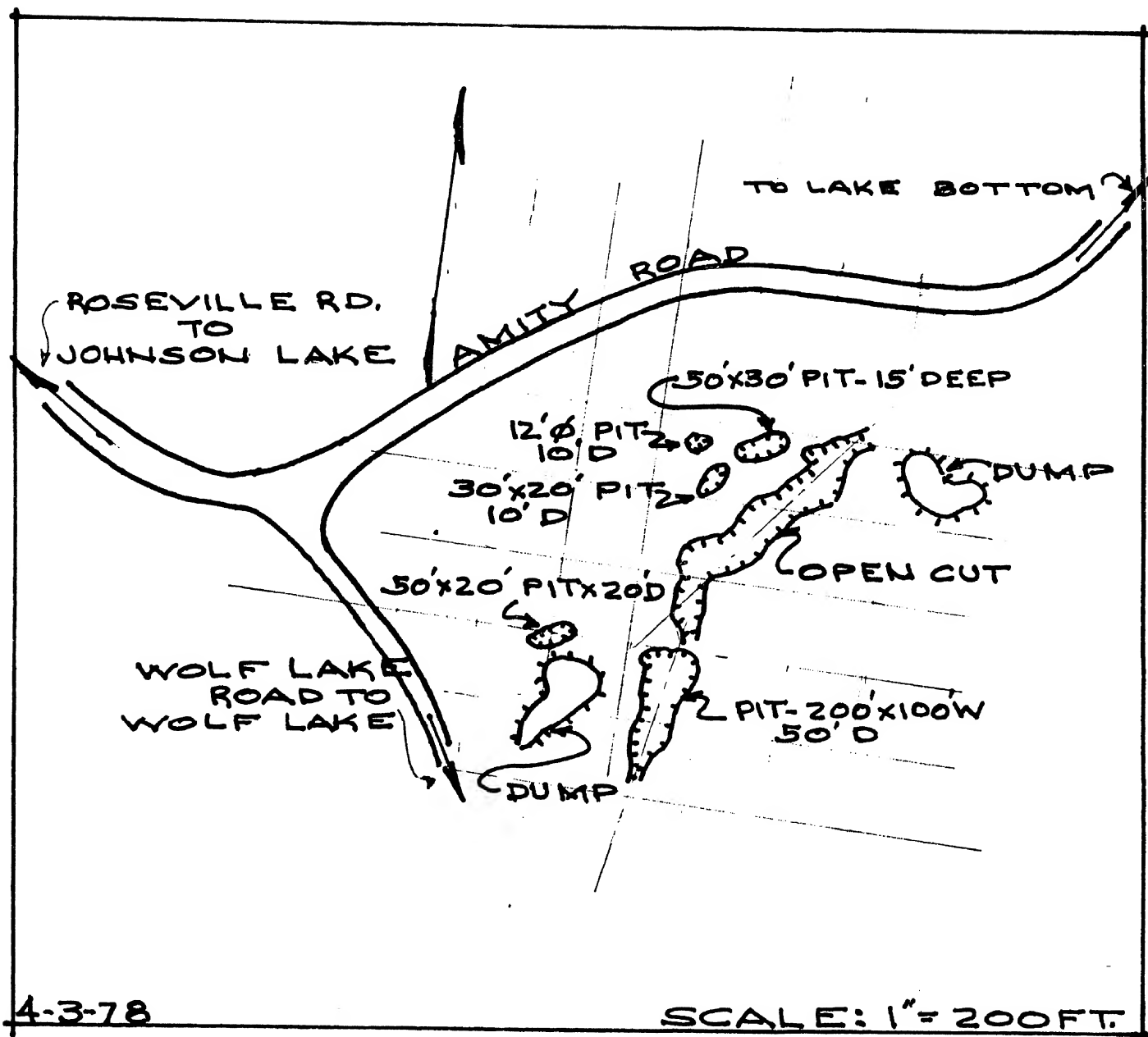
SCALE: 1" = 100 FT.

McKEAN MINE AREA

BYRAM TWP.  
SUSSEX COUNTY

MINE SAFETY SECTION  
N. J. DEPT. OF LABOR & INDUSTRY

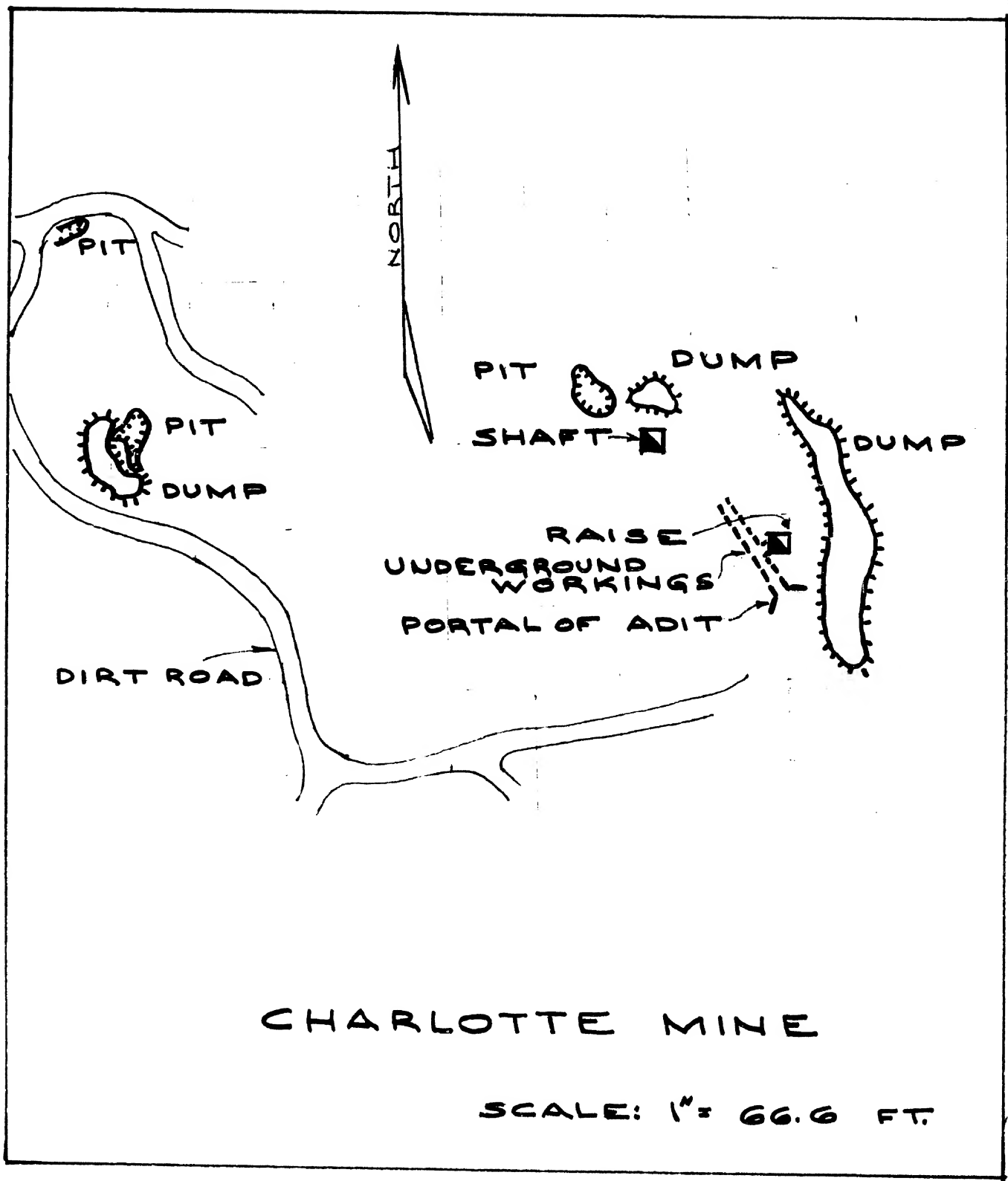
PLATE 7



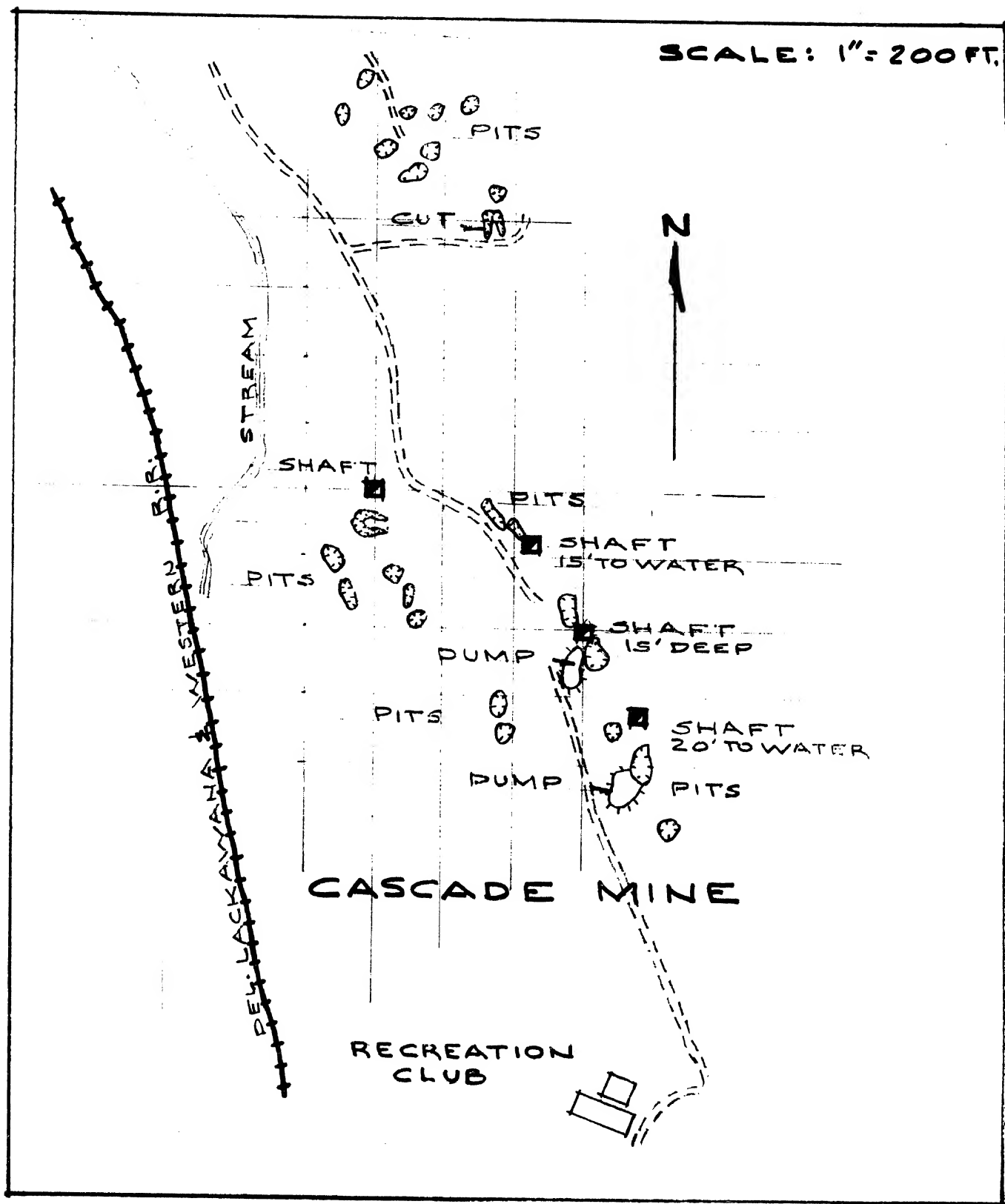
ROSEVILLE MINE AREA  
BYRAM TOWNSHIP  
SUSSEX CO.

MINE SAFETY SECTION  
N. J. DEPT. OF LABOR & INDUSTRY

PLATE 8



1978  
BYRAM TWP.  
SUSSEX CO.  
MINE SAFETY SECTION  
N. J. DEPT. OF LABOR & INDUSTRY  
PLATE 9



1978

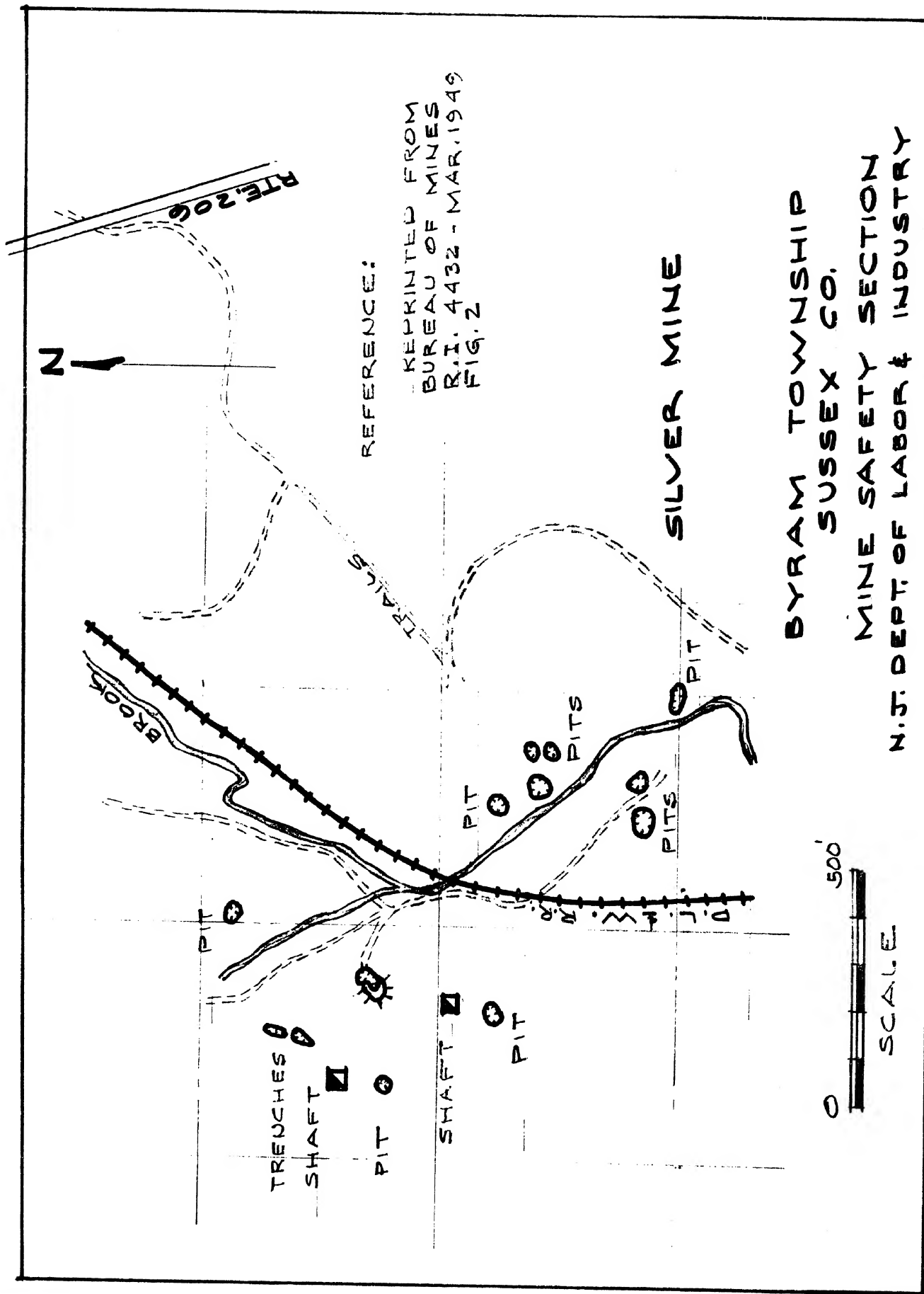
BYRAM TOWNSHIP

SUSSEX CO.

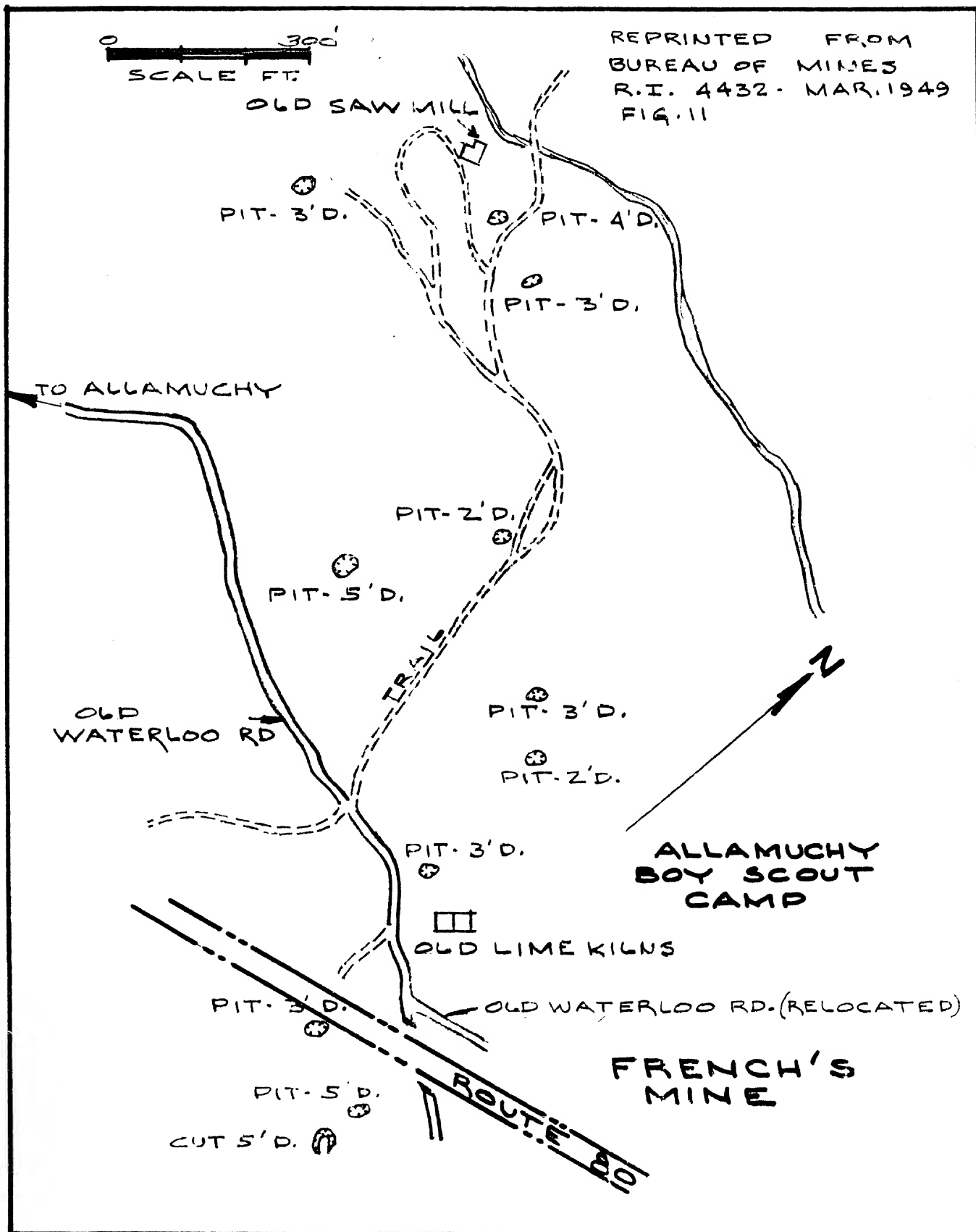
MINE SAFETY SECTION

N. J. DEPT. OF LABOR & INDUSTRY

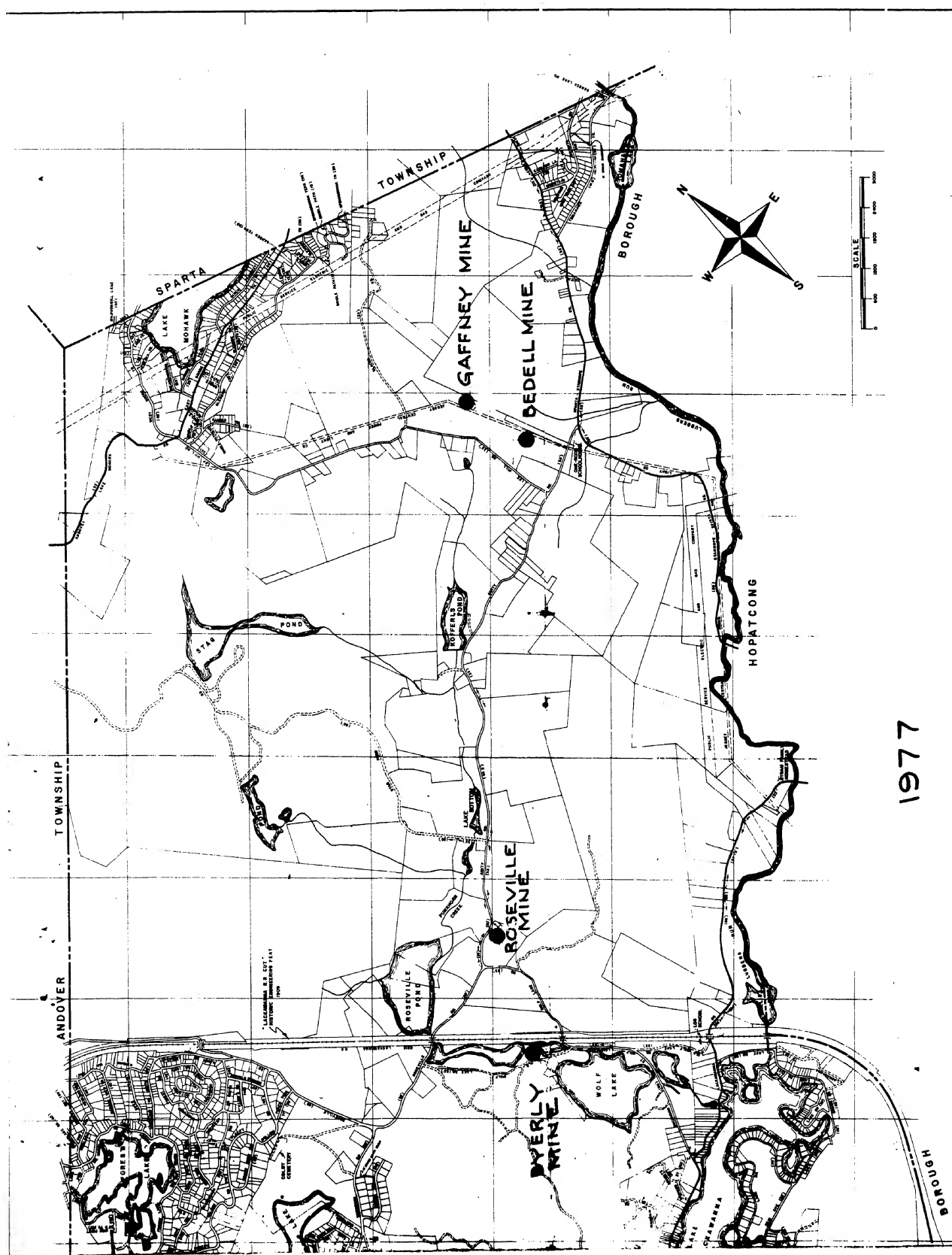
PLATE 10







1978  
BYRAM TWP.  
SUSSEX CO.  
MINE SAFETY SECTION  
N.J. DEPT. OF LABOR & INDUSTRY  
PLATE 13



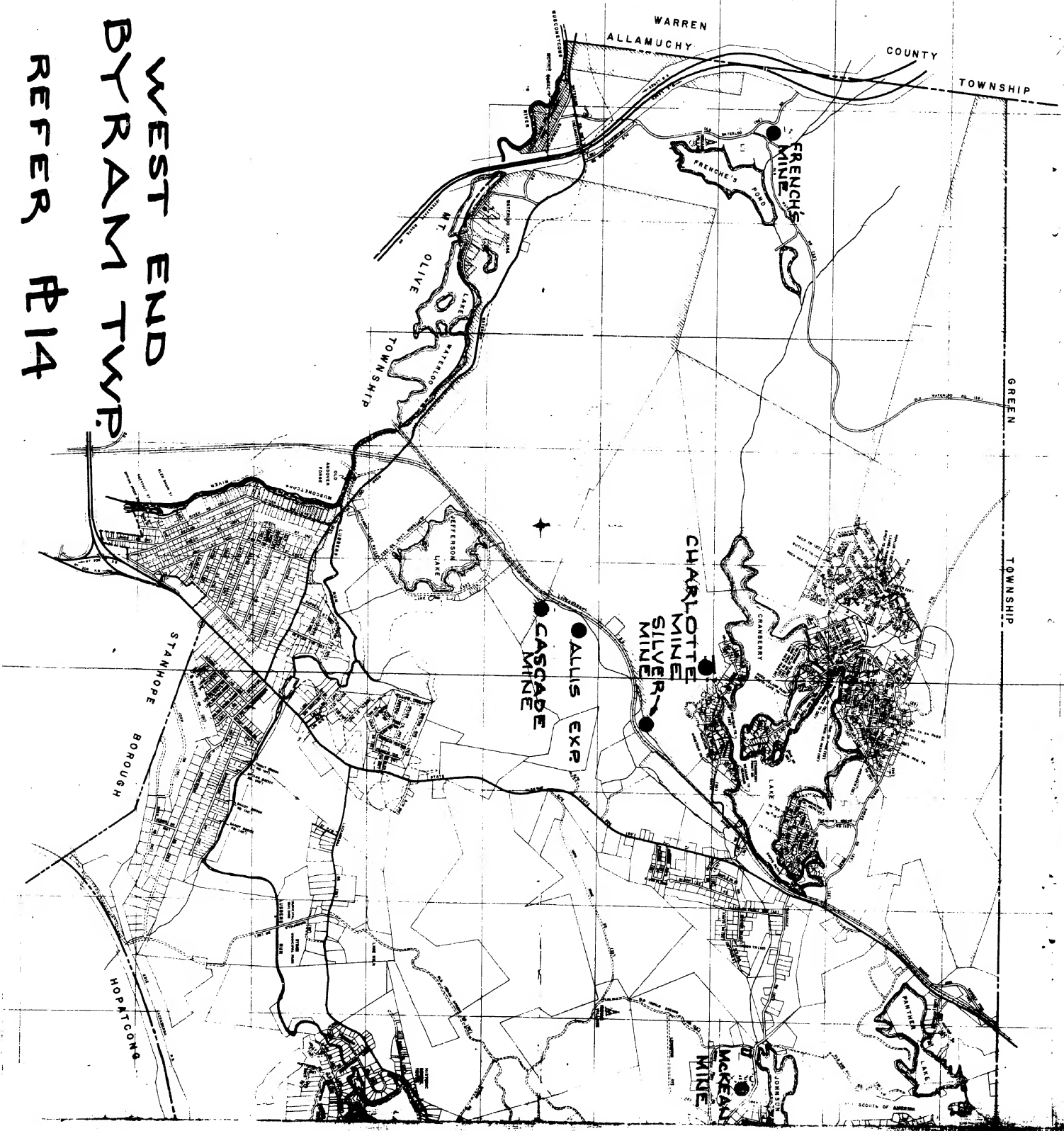
1977

ADDED LOCATIONS OF IRON MINES  
 MINE SAFETY SECTION  
 N.J. DEPT. OF LABOR AND INDUSTRY

Township of  
**BYRAM**  
 Sussex County, N.J.

PLATE 14

WEST END  
BYRAM TWP  
REELER #14



NOTICE

THE DEPARTMENT OF LABOR & INDUSTRY REQUESTS THAT ANYONE, AWARE OF ANY SURFACE DEPRESSIONS THAT COULD HAVE BEEN CAUSED BY MINE WORKINGS WITHIN THE TOWNSHIP, THAT ARE NOT INCLUDED IN THIS REPORT, CONTACT THE MINE SAFETY SECTION AT:

(609) 292-2096